

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 20, 21, 24, 26, 34, and 36 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claims 20, 26, 34, and 36 are objected to because of the following informalities: Claims 20 and 26 indicate "a next document" in the second line of the limitation regarding the separation control section. All further references to a next document should be the next document. Appropriate correction is required.

3. Claim 20 is objected to because of the following informalities: Claim 20 claims "...the trailing edge is detected, by an optical sensor, when the trailing edge passes through the roller by a second sensor..." As confirmed with Caroline Do on 06/09/10 that the claim should read "... the trailing edge is detected, by a second sensor, when the trailing edge passes through the roller..." as to mirror the amendment made in claim 26. Appropriate correction is required. Caroline Do indicated that she would correct the issue upon receipt of this office action.

4. Claim 21 is objected to because of the following informalities: Claim 21 claims "...the document is a recording sheet had been recorded in color." It should read ...the

document is a recording sheet recorded in color, to be grammatically correct.

Appropriate correction is required.

5. Claim 36 is objected to because of the following informalities: Claim 36 claims "...the first sensor being a retractable flag and the second sensor being an optical sensore..." The claim should read "...the first sensor being a retractable flag and the second sensor being an optical **sensor**... Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 20 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 20 and 26 both claim 2 different sensors are used to detect the leading edge and the trailing edge respectively. The claim then further describes how the separation of the document is contingent on the detection of the leading edge from the first sensor and the trailing edge from the optical sensor. According to paragraphs 59-66, the same sensor, register sensor 111, is used to detect the leading edge and the trailing edge in regards to the document passing

though the roller. This is explicitly disclosed in paragraph 61. Paragraph 60 describes how the separation sensor 110 is used to sense the leading edge and paragraph 61 describes how the register sensor 111 detects the trailing edge as the document passes through the roller 103. Therefore having two separate sensors to detect the leading and trailing edge is enabled but the control of the separation of the documents using sensors 110 and 111 is not described in the disclosure.

8. Claims 34 and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 34 and 36 describe the first sensor to be a retractable flag and the second sensor to be an optical sensor. If this is the case, then the first and second sensor would be part of the register sensor 111 as disclosed in paragraph 61. Paragraph 61 does not describe the flag detecting the leading edge and the optical sensor detecting the trailing edge. Paragraph 61 describes the register sensor 111 as being the sensor that detects both the leading and trailing edge. There is no other mention of a register flag being used to detect a leading edge of a document.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 20, 21, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maehara (US 5,852,501) in view of Toyomura (US 5,796,928) further in view of Onuki (US 6,201,944) further in view of Kamanuma (US 6,256,473).

Regarding Claim 20, Maehara teaches an automatic document feeder (Figure 2, element 12 and Column 6, lines 49-50) comprising:

a document tray on which a plurality of documents can be placed (Figure 2, element 13 and Column 6, line 50);

a separating section configured to separate the documents placed on the document tray one by one (Column 5, lines 25-38);

a feeding section configured to feed the separated document to a document reading position (Column 9, line 65 – Column 10, line 33); and

a sensor section provided between the separating section and the document reading position and configured to detect passage of a document separated by the separating section (Column 8, lines 31-4 and Column 9, line 65 – Column 10, line 33 and Figure 2, elements 14 and 17); and

wherein the leading edge is detected, by a first sensor, before the leading edge reaches a roller (Figure 2, element 14, wherein sensor 14 is located before roller 19) and the trailing edge is detected, by an optical sensor, when the trailing edge passes through the roller by a second sensor (Figure 2, element 17, wherein the sensor would

be optical as it detects the document passing through the roller and is therefore detecting the edge of the document passing through the roller, via light.).

Maehara does not teach an input section inputting information on the material of the document; and

a separation control section for controlling timing of starting a separating operation of a next document in the separating section based on whether a leading edge of the next document is detected but the trailing edge of a preceding document is not detected from the sensor section, wherein the leading edge is detected, by a first sensor, before the leading edge reaches a roller and the trailing edge is detected, by an optical sensor, when the trailing edge passes through the roller by a second sensor, and wherein the separation control section controls the separating section so that the timing of starting a separating operation of a next document in a case where the information on the material of the document inputted by the input section is predetermined information is later than the timing of starting a separating operation of a next document in a case where the information on the material of the document inputted by the input section is not the predetermined information.

Toyomura does teach a separation control section controlling timing of starting a separating operation of a next document in the separating section based on an output from the sensor section, wherein the leading edge is detected, by a first sensor, before the leading edge reaches a roller (Figure 1, element 14, wherein sensor 14 is located before roller 19) and the trailing edge is detected, by an optical sensor, when the trailing edge passes through the roller by a second sensor (Figure 1, element 17, wherein the

sensor would be optical as it detects the document passing though the roller and is therefore detecting the edge of the document passing though the roller, via light.), and wherein the separation control section controls the separating section so that the timing of starting a separating operation of a next document in a case where the information on the material of the document inputted by the input section is predetermined information is later than the timing of starting a separating operation of a next document in a case where the information on the material of the document inputted by the input section is not the predetermined information (Column 10, lines 33-55).

Maehara and Toyomura are combinable because they both deal with controlling the operations of a copier.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara with the teachings of Toyomura for the purpose of reading a color image with a higher continuous tone reproducibility (Toyomura: Column 10, lines 33-55).

Onuki does teach an input section inputting information on the material of the document (Column 8, lines 48-63, wherein based on the specification, the material type seems to be defined as if it is a color or monochrome document).

Maehara and Onuki are combinable because they both deal with controlling the operations of a color copier.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara with the teachings of

Onuki for the purpose of allowing the user to define the type of document to be copied (Onuki: Column 8, lines 48-63).

Kamanuma teaches a separation control section for controlling timing of starting a separating operation of a next document in the separating section based on whether a leading edge of the next document is detected but the trailing edge of a preceding document is not detected from the sensor section (Column 16, lines 37-64).

Maehara and Kamanuma are combinable because they both deal with controlling the operations of a copier.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara with the teachings of Kamanuma for the purpose improving the productivity in regard to reading the original document (Kamanuma: Column 17, lines 6-9).

Regarding Claim 21, Maehara does not teach wherein the input section inputs information on whether or not the document is recording sheet had been recorded in color.

Onuki does teach wherein the input section inputs information on whether or not the document is recording sheet had been recorded in color (Column 8, lines 48-63).

Maehara and Onuki are combinable because they both deal with controlling the operations of a color copier.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara with the teachings of

Onuki for the purpose of allowing the user to define the type of document to be copied (Onuki: Column 8, lines 48-63).

Regarding Claim 24, Maehara does not teach wherein the input section inputs information set by a console section of a connected imaging device or information set by a console section of the document feeder.

Onuki does teach wherein the input section inputs information set by a console section of a connected imaging device or information set by a console section of the document feeder (Column 8, lines 48-63).

Maehara and Onuki are combinable because they both deal with controlling the operations of a color copier.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara with the teachings of Onuki for the purpose of allowing the user to define the type of document to be copied (Onuki: Column 8, lines 48-63).

11. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maehara (US 5,852,501) in view of Toyomura (US 5,796,928) further in view of Kamanuma (US 6,256,473).

Regarding Claim 26, Maehara teaches an automatic document feeder connected to an imaging device (Figure 2, element 12 and Column 6, lines 49-50) comprising: a

document tray on which a plurality of documents can be placed (Figure 2, element 13 and Column 6, line 50);

a separating section configured to separate the documents placed on the document tray one by one (Column 5, lines 25-38);

a feeding section configured to feed the separated document to a document reading position (Column 9, line 65 – Column 10, line 33);

a sensor section provided between the separating section and the document reading position and configured to detect passage of a document separated by the separating section (Column 8, lines 31-44 and Column 9, line 65 – Column 10, line 33 and Figure 2, elements 14 and 17);

a determining section determining whether the recording mode of the imaging device is a color recording mode or a monochrome recording mode (Column 13, lines 25-37); and

wherein the leading edge is detected, by a first sensor, before the leading edge reaches a roller (Figure 2, element 14, wherein sensor 14 is located before roller 19) and the trailing edge is detected, by a second sensor, when the trailing edge passes through the roller (Figure 2, element 17, wherein the sensor would be optical as it detects the document passing through the roller and is therefore detecting the edge of the document passing through the roller, via light.).

Maehara does not teach a separation control section controlling timing of starting a separating operation of a next document in the separating section based on whether a

leading edge of the next document is detected but a trailing edge of a preceding document is not detected from the sensor section; and

wherein the separation control section controls the separating section so that the timing of starting a separating operation of a next document in a case where the recording mode of the imaging device is the color recording mode is later than the timing of starting a separating operation of a next document in a case where the recording mode of the imaging device is the monochrome recording mode.

Toyomura does teach wherein the separation control section controls the separating section so that the timing of starting a separating operation of a next document in a case where the recording mode of the imaging device is the color recording mode is later than the timing of starting a separating operation of a next document in a case where the recording mode of the imaging device is the monochrome recording mode (Column 10, lines 33-55), wherein the leading edge is detected, by a first sensor, before the leading edge reaches a roller (Figure 1, element 14, wherein sensor 14 is located before roller 19) and the trailing edge is detected, by a second sensor, when the trailing edge passes through the roller (Figure 1, element 17, wherein the sensor would be optical as it detects the document passing though the roller and is therefore detecting the edge of the document passing though the roller, via light.).

Maehara and Toyomura are combinable because they both deal with controlling the operations of a copier.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara with the teachings of Toyomura for the purpose of reading a color image with a higher continuous tone reproducibility (Toyomura: Column 10, lines 33-55).

Kamanuma teaches a separation control section controlling timing of starting a separating operation of a next document in the separating section based on whether a leading edge of the next document is detected but a trailing edge of a preceding document is not detected from the sensor section (Column 16, lines 37-64).

Maehara and Kamanuma are combinable because they both deal with controlling the operations of a copier.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara with the teachings of Kamanuma for the purpose improving the productivity in regard to reading the original document (Kamanuma: Column 17, lines 6-9).

12. Claims 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maehara (US 5,852,501) in view of Toyomura (US 5,796,928) further in view of Onuki (US 6,201,944) further in view of Kamanuma (US 6,256,473) further in view of Yokota (US 2003/0038989).

Regarding Claim 34, Maehara in view of Toyomura further in view of Onuki further in view of Kamanuma does not teach wherein the sensor section includes the

first sensor and the second sensor, the first sensor being a retractable flag and the second sensor being an optical sensor, and wherein the separation control section controls the separating section to start a separating operation of a next document based on an output from the first sensor in a case where the information on the material of the document inputted by the input section is not the predetermined information, and controls the separating section to start a separating operation of a next document based on an output from the second sensor in a case where the information on the material of the document inputted by the input section is the predetermined information.

Yokota does teach wherein the sensor section includes the first sensor and the second sensor provided downstream of the first sensor, and wherein the separation control section controls the separating section to start a separating operation of a next document based on an output from the first sensor in a case where the information on the material of the document inputted by the input section is not the predetermined information, and controls the separating section to start a separating operation of a next document based on an output from the second sensor in a case where the information on the material of the document inputted by the input section is the predetermined information (Page 8, paragraph 142, wherein the information about the material is already known from Maehara. Yokota is used to teach that two sensors can be used to control the timing).

Maehara in view of Toyomura further in view of Onuki and Yokota are combinable because they both deal with controlling the operations of a copier.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara in view of Toyomura further in view of Onuki further in view of Kamanuma with the teachings of Yokota for the purpose of controlling the timing of the reading (Yokota: Page 8, paragraph 142).

Barry does teach the first sensor being a retractable flag and the second sensor being an optical sensor (Column 6, lines 25-43).

Maehara and Barry are combinable because they both deal with sensing the position of a document.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara in view of Toyomura further in view of Onuki further in view of Kamanuma with the teachings of Barry for the purpose of using multiple types of sensor for sensing the positions of a document so as not to be hindered by the type of document (Barry: Column 6, lines 25-43).

13. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maehara (US 5,852,501) in view of Toyomura (US 5,796,928) further in view of Kamanuma (US 6,256,473) further in view of Yokota (US 2003/0038989).

Regarding Claim 36, Maehara in view of Toyomura further in view of Kamanuma does not teach wherein the sensor section includes the first sensor and the second sensor, the first sensor being a retractable flag and the second sensor being an optical sensor, and wherein the separation control section controls the separating section to

start a separating operation of a next document based on an output from the first sensor in a case where the information on the material of the document inputted by the input section is not the predetermined information, and controls the separating section to start a separating operation of a next document based on an output from the second sensor in a case where the information on the material of the document inputted by the input section is the predetermined information.

Yokota does teach wherein the sensor section includes the first sensor and the second sensor provided downstream of the first sensor, and wherein the separation control section controls the separating section to start a separating operation of a next document based on an output from the first sensor in a case where the information on the material of the document inputted by the input section is not the predetermined information, and controls the separating section to start a separating operation of a next document based on an output from the second sensor in a case where the information on the material of the document inputted by the input section is the predetermined information (Page 8, paragraph 142, wherein the information about the material is already known from Maehara. Yokota is used to teach that two sensors can be used to control the timing).

Maehara in view of Toyomura further in view of Kamanuma and Yokota are combinable because they both deal with controlling the operations of a copier.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara in view of Toyomura

further in view of Kamanuma with the teachings of Yokota for the purpose of controlling the timing of the reading (Yokota: Page 8, paragraph 142).

Barry does teach the first sensor being a retractable flag and the second sensor being an optical sensor (Column 6, lines 25-43).

Maehara and Barry are combinable because they both deal with sensing the position of a document.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maehara in view of Toyomura further in view of Kamanuma with the teachings of Barry for the purpose of using multiple types of sensor for sensing the positions of a document so as not to be hindered by the type of document (Barry: Column 6, lines 25-43).

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas C. Pachol whose telephone number is 571-270-3433. The examiner can normally be reached on M-Thr, 8:00 a.m.- 4:00 p.m. (EST), Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler L. Haskins can be reached on 571-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 2625

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/Twyler L. Haskins/

Supervisory Patent Examiner, Art Unit 2625